APPROVAL TO CONSTRUCT/MODIFY
A STATIONARY SOURCE

In compliance with provisions of the Clean Air Act, as amended (42 U.S.C. 7401 et seq.), the U.S. Navy is granted approval to construct and operate three 6.6 MW diesel electric generators to be located at the U.S. Navy's Orote Point Power Plant on the island of Guam, in accordance with the plans submitted with the applications and with the Federal regulations governing the Prevention of Significant Air Quality Deterioration (40 C.F.R. 52.21) and other conditions attached to this document and made a part of this approval.

Failure to comply with any condition or term set forth in this approval will be considered grounds for enforcement action pursuant to Section 113 of the Clean Air Act.

This Approval to Construct/Modify a stationary source grants no relief from the responsibility for compliance with any other applicable provision of 40 CFR Parts 52, 60 and 61 or any applicable Federal, State, or local air quality regulations.

This approval shall become effective immediately upon receipt by the U.S. Navy.

Dated: 12/12/95

David P. Howekamp
Director
Air and Toxics Division

PERMIT CONDITIONS

I. Permit Expiration

This approval to Construct/Modify shall become invalid (1) if construction is not commenced (as defined in 40 CFR 52.21(b)(8)) within 18 months after the approval takes effect, (2) if construction is discontinued for a period of 18 months or more, or (3) if construction is not completed within a reasonable time.

II. Notification of Commencement of Construction and Startup

The Regional Administrator shall be notified in writing of the anticipated date of initial startup (as defined in 40 CFR 60.2(o)) of each facility of the source not more than sixty (60) days nor less than thirty (30) days prior to such date and shall be notified in writing of the actual data of commencement of construction and startup within fifteen (15) days after such date.

III. Facilities Operation

All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this Approval to Construct/Modify shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions.

IV. Malfunction

The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in emissions above any allowable emissions limit stated in Section X of these conditions. In addition, the Regional Administrator shall be notified in writing within fifteen (15) days of any such failure. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of the initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under Section X of these conditions, and the methods utilized to restore normal operations. Compliance with this malfunction notification provisions shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause.

V. Right to Entry

The Regional Administrator, the head of the State Air Pollution Control Agency, the head of the responsible local Air Pollution Control Agency, and/or their authorized representative, upon the presentation of credentials, shall be permitted:

A. to enter upon the premises where the source is located or in which any records are required to be kept under the terms and conditions of this Approval to Construct/Modify; and

B. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of the Approval to Construct/Modify: and

C. to inspect any equipment, operation, or method required in this Approval to Construct/Modify; and

D. to sample emissions from the source.

VI. Transfer of Ownership

In the event of any changes in control or ownership of facilities to be constructed or modified, this Approval to Construct/Modify shall be binding on all subsequent owners and operators. The applicant shall notify the succeeding owner and operator of the existence of this Approval to Construct/Modify and its conditions by letter, a copy of which shall be forwarded to the Regional Administrator and the State and local Air Pollution Control Agency.

VII. Severability

The provisions of this Approval to Construct/Modify are severable, and, if any provision of this Approval to Construct/Modify is held invalid, the remainder of this Approval to Construct/Modify shall not be affected thereby.

VIII. Other Applicable Regulations

The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable federal, state and local air quality regulations.

IX. Paperwork Reduction Act

Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget ("OMB") under the Paperwork Reduction Act because this permit is not an "information collection request" within the meaning of 44 U.S.C. §§ 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the Paperwork Reduction Act because it is directed to fewer than ten persons. 44 U.S.C. § 3502(4), (11); 5 C.F.R. § 1320.5(a).

X. Special Conditions

A. Certification

The U.S. Navy shall notify the EPA in writing of compliance with Special Conditions IX.B and IX.H and shall make such notification within (15) days of such compliance. This letter must be signed by a responsible representative of the U.S. Navy.

B. Air Pollution Control Equipment

The U.S. Navy shall install, continuously operate and maintain the following air pollution controls to minimize emissions. Controls listed shall be fully operational upon startup of the proposed equipment.

1. Fuel Injection Timing Retard of 10 degrees

2. Turbocharging

C. Performance Tests

1. Within 60 days of achieving the maximum production rate of the proposed equipment but not later than 180 days after initial startup of the equipment as defined in 40 CFR 60.2(o), and at such other times as specified by the EPA, the U.S. Navy shall conduct performance tests for NO_x, SO_2, and CO and furnish the EPA (Attn: A-3-3) a written report of the results of such test. The tests for NO_x, SO_2, and CO shall be conducted on an annual basis and at the maximum operating capacity of the facilities being tested. Upon written request (Attn: A-3-3) from U.S. Navy, EPA may approve the conducting of performance test as a lower specified production rate. After initial performance tests and upon written request and adequate justification from the U.S. Navy, EPA may waive a specified annual test for the facility.

2. Performance tests for the emissions of SO_2, NO_x, and CO shall be conducted and the results reported in accordance with the test methods set forth in 40 CFR 60, Part 60.8 and Appendix A. The following test methods shall be used:

   a. Performance tests for the emissions of SO_2 shall be conducted using EPA Methods 1-4 and 6C.

b. Performance tests for the emissions of CO shall be conducted using EPA Methods 1-4 and 10.

c. Performance tests for the emissions of NO_x shall be conducted using EPA Methods 1-4 and 7E.

The EPA (Attn: A-3-3) shall be notified in writing at least 30 days prior to such test to allow time for the development of an approvable performance test plan and to arrange for an observer to be present a the test.

Such prior approval shall minimize the possibility of EPA rejection of test results for procedural deficiencies. In lieu of the above-mentioned test methods, equivalent methods may be used with prior written approval from the EPA.

3. For performance test purposes, sampling ports, platforms and access shall be provided by the U.S. Navy on the diesel engine exhaust systems in accordance with 40 CFR 60.8(e).

D. Operating Limitations

1. The sulfur content in the fuel oil used to fire the diesel engine shall not exceed 0.6 weight percent.

2. The U.S. Navy shall record and maintain records of the amounts of fuel oil fired and sulfur weight percent each calendar quarter, and the plant hours of operation. All information shall be recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, calculation and record.

E. Emissions Limits for SO_2

On and after the date of startup, the U.S. Navy shall not discharge or cause the discharge of SO_2 in excess of 34.3 lbs/hr from each diesel engine.

F. Emission Limits for CO

On and after the date of startup, the U.S. Navy shall not discharge or cause the discharge of CO in excess of 9.0 lbs/hr from each diesel engine.

EPA may set a new lower allowable emission rate for the above emission limits after reviewing the performance test results required under Special Condition C.

If the CO emission limit is revised, the difference between the CO emission limit set forth above and a revised lower CO emission limit shall not be allowed as an emission offset for future construction or modification.

G. Emission Limits for NO_x

On and after the date of startup, the U.S. Navy shall not discharge or cause the discharge of NO_x in excess of 142.2 lbs/hr from each diesel engine.

EPA may set a new lower allowable emission rate for the above emission limits after reviewing the performance test results or the initial NO_x monitoring data required under Special Conditions C and H.

If the NO_x emission limit is revised, the difference between the NO_x emission limit set forth above and a revised lower NO_x emission limit shall not be allowed as an emission offset for future construction or modification.

H. Continuous/Predictive Emission Monitoring

1. Prior to the date of startup and thereafter, the U.S. Navy shall install, maintain and operate the following continuous monitoring systems (CEM) in the main stack:

   a. A continuous monitoring system to measure stack gas NO_x concentrations. The system shall meet EPA monitoring performance specification (40 CFR 60.13 and 40 CFR 50, Appendix B, Performance Specification 2, 3, and 4).

   b. A continuous monitoring system to measure stack gas volumetric flow rates. The system shall meet EPA performance specifications (40 CFR Part 52, Appendix E).

2. Alternatively, instead of a CEM system, the U.S. Navy may install a Predictive Emission Monitoring system (PEM) for determining stack gas volumetric flow rates and NOx concentrations. The system shall monitor engine operating conditions and predict NOx emission rates as specified in a plan submitted to EPA for approval within 360 days of the initial startup of the facility. The plan shall identify the operating conditions to be monitored and meet all of the requirements of 40 CFR 75, Subpart E, including an application for certification of an alternative monitoring system.

3. The U.S. Navy shall maintain a file of all measurements, including continuous monitoring systems evaluations; all continuous monitoring systems or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; performance and all other information required by 40 CFR 60 recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports and records.

4. The U.S. Navy shall notify EPA (Attn: A-3-3) of the date which demonstration for the continuous monitoring system (if applicable) performance commences (40 CFR 60.13(c)). This date shall be no later than 60 days after startup.

5. The U.S. Navy shall submit a written report of all excess emissions to EPA (Attn: A-3-3) for every calendar quarter. The report shall include the following:

   a. The magnitude of the excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factors used, and the date and time of commencement and compilation of each time period of excess emissions.

   b. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the engine exhaust systems. The nature and cause of any malfunction (if known) and the corrective action taken or preventative measures adopted shall also be reported.

   c. The date and time identifying each period during which the continuous monitoring system or PEM was inoperative except for zero and span checks, and the nature of the system repairs or adjustments.

   d. When no excess emissions have occurred or the continuous monitoring system or PEM has not been imperative, repaired, or adjusted, such information shall be stated in the report.

   e. Excess emissions shall be defined as any 3-hour period during which the average emission of SO_2, NO_x, and PM, as measured by the CEM, or predicted by the PEM, exceeds the maximum emission limits set forth in Conditions IX.E, IX.F., and IX.G.

6. Excess emission indicted by the CEM or PEM system shall be considered violations of the applicable emission limit for the purpose of this permit.

7. If a CEM system is installed, then not less than 90 days prior to the date of startup of the facility, the U.S. Navy shall submit to the EPA (Attn: A-3-3) a quality assurance project plan for the certification and operation of the continuous emission monitors. Such a plan shall conform to the EPA document "Guidelines for Developing a Quality Assurance Project Plan" (QAMS 005/80). Continuous emission monitoring may not begin until the QA project plan has been approved by the EPA Region 9.

X. Agency Notifications

All correspondence as required by this Approval to Construct/Modify shall be forwarded to:

A. Director, Air and Toxics Division (Attn: A-3-3)
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

B. Administrator
Guam Environmental Protection Agency
P.O. Box 22439 GMF
Barrigada, Guam 96921

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

December 13, 1995

IN REPLY A-5-1
REFER TO: NSR 4-11
GU 93-03

Captain G. M. Craft
Commanding Officer
U.S. Navy Public Works Center
Agana, Guam, U.S.A. 96910

Dear Captain Craft:

In accordance with provisions of the Clean Air Act, as amended (42 U.S.C. 7401 et seq.), the Environmental Protection Agency has reviewed the application for an Approval to Construct submitted by the U.S. Navy for the construction and operation of three 6.6 MW diesel electric generators to be located at the U.S. Navy's Orote Point Power Plant on the island of Guam.

A request for public comment regarding EPA's proposed action on the above application has been published. After consideration of the expressed views of all interested persons (including State and local agencies), and pertinent Federal statutes and regulations, the EPA hereby issues the enclosed Approval to Construct/Modify a Stationary Source for the facilities described above. This action does not constitute a significant change from the proposed action set forth and offered for public comment.

This Approval to Construct/Modify shall take effect immediately.

Should you have any questions regarding this matter, please contact Bob Baker of our New Source Section at (415) 744-1258.

Sincerely,

David P. Howekamp
Director
Air and Toxics Division

Enclosures

cc: Guam EPA
Eric Newman, GMP Associates, Inc.

Permits File

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

November 4, 1993

IN REPLY A-5-1
REFER TO: NSR 4-11
GU 93-03

Captain G. M. Craft
Commanding Officer
U.S. Navy Public Works Center
Agana, Guam, U.S.A. 96910

Dear Captain Craft:

This is in response to your Prevention of Significant Deterioration application for an Environmental Protection Agency Approval to Construct, dated July 14, 1993, and received by this office on July 27, 1993. The application is for the construction and operation of three 6.6 MW diesel electric generators to be located at the U.S. Navy's Orote Point Power Plant on the island of Guam.

After our initial review of the above application, EPA determined that additional information concerning the air quality analyses was needed before we could continue processing the permit. Collection of the necessary on-site meteorological data had already commenced in March 1993. In August 1993, Guam was granted a 325 exemption under the Clean Air Act. For the Orote Point diesels the exemption specifically states in 40 CFR 69.11(a)(1)(iii) that "the PSD application for each electric generating unit shall be deemed complete without the submittal of the required one year of on-site meteorological data". Therefore, EPA hereby deems the PSD application for the Orote Point diesels to be complete. However, it is possible that clarifying information on one or more parts of the application may be required before we can issue a draft permit.

This notification of completeness does not imply that the EPA agrees with any analyses, conclusions or positions contained in the application. Also, if you should request a suspension in the processing of the application, or submit new information indicating a significant change in the project design, ambient impact or emissions, this determination of completeness may be revised.

Upon issuance of the preliminary determination, we will publish a public notice of our intent to issue the permit. The comment period specified in the notice shall be at least 30 days. Please be advised that at anytime anyone may have full access to the application materials and other information you provide to us in connection with this permit action.

This letter is also to inform you of your rights to claim business confidentiality under 40 CFR 2, Subpart B for any part of or all of the information you provide us, and to document for our files that we have done so. If you do not make a claim of confidentiality for any of this material within 15 days of the date you receive this letter you will have waived your right to do so. The facility name and address may not be claimed as confidential.

If you wish to claim confidentiality, you must substantiate your claim. Your substantiation must address the points enumerated in the attachment to this letter, in accordance with 40 CFR 2.204(e).

If you should have any questions concerning a claim of confidentiality or any question concerning the review of your application, please contact Bob Baker of my staff at (415) 744-1258.

Sincerely,

Matt Haber
Chief, New Source Section
Air and Toxics Division

Attachment

cc: GEPA
Jess Lizama, USNPWC
Dr. Marc Siah, GMP
Norm Lovelace (E-4)

ATTACHMENT

INSTRUCTIONS FOR CLAIMING CONFIDENTIALITY

A. Pursuant to 40 CFR 2.204(e), your claim must address these points:

i. The portions of the information alleged to be entitled to confidential treatment;

ii. The period of time for which confidential treatment is desired by the business (e.g., until the occurrence of a specific event, or permanently);

iii. The purpose for which the information was furnished to EPA and the appropriate date of submission, if known;

iv. Whether a business confidentiality claim accompanied the information when it was received by EPA;

v. Measures taken by you to guard against the undesired disclosure of the information to others;

vi. The extent to which the information has been disclosed to others and the precautions taken in connection therewith;

vii. Pertinent confidentiality determinations, if any, by EPA or other Federal agencies, and a copy of any such determination or reference to it, if available;

viii. Whether you assert that disclosure of this information would be likely to result in substantial harmful effects on your business's competitive position, and if so, what those harmful effects would be, why they should be viewed as substantial; and an explanation of the casual relationship between disclosure and such harmful effect, and

ix. Whether you assert that the information is voluntarily submitted information and if so, whether any disclosure of the information would tend to lessen the availability to EPA of similar information in the future. "Voluntarily submitted information" is defined in 40 CFR Section 2.201(i) as business information in EPA's possession - -

a). The submission of which EPA has no statutory or contractual authority to require; and

b). The submission of which was not prescribed by statute or regulation as a condition of obtaining some benefit (or avoiding some disadvantage) under a regulatory program of general applicability, including such

regulatory programs as permit, licensing, registration, or certification programs, but excluding programs concerned solely or primarily with the award or administration by EPA of contracts or grants.

B. We will disclose information covered by your claim only to the extent provided for in 40 CFR Part 2, Subpart B Confidentiality of Business Information. Please address your claim and substantiation of confidentiality to the staff person mentioned in the letter at EPA Region 9 (A-5-1), 75 Hawthorne Street, San Francisco, CA 94105.

IN REPLY A-5-1
REFER TO: NSR 4-11
GU 93-03

Captain G. M. Craft
Commanding Officer
U.S. Navy Public Works Center
Agana, Guam 96910

Dear Captain Craft:

This letter is to acknowledge receipt of your application, dated July 14, 1993 and received by this office on July 27, 1993, submitted by GMP Associates, Inc. on behalf of the U.S. Navy, for an Environmental Protection Agency Prevention of Significant Deterioration Approval to Construct. The application is for the construction and operation of three 6.6 MW diesel engine electric generators to be located at the U.S. Navy's Orote Point Power Plant on the island of Guam.

Your application and all supporting information is currently being reviewed by this office. You will be notified if additional information is needed in order to continue the processing of the application.

The Guam EPA is being notified of our receipt of this application by copy of this letter. You should consult them concerning their permitting requirements.

If you have any questions concerning the review of your application, please contact Bob Baker of my staff at (415) 744-1258.

Sincerely,

Matt Haber
Chief, New Source Section
Air and Toxics Division

cc: GEPA
Jess Lizama, USNPWC
Dr. Marc Siah, GMP
Norm Lovelace (E-4)

A-5-1
Baker
8/13/93

IN REPLY A-5-1
REFER TO: NSR 4-11
GU 93-03

Captain G. M. Craft
Commanding Officer
U.S. Navy Public Works Center
Agana, Guam, U.S.A. 96910

Dear Captain Craft:

This is in response to your July 14, 1993 application for an Environmental Protection Agency Approval to Construct pursuant to the Prevention of Significant Air Quality Deterioration regulations (40 CFR 52.21). The proposed project is the construction and operation of three 6.6 MW diesel electric generators to be located at the U.S. Navy's Orote Point Power Plant on the island of Guam.

Our review of the information submitted indicates that pollutants would be emitted in the amounts as listed below:

Pollutants	Allowable Emission Rate tons/year
Sulfur Dioxide	451.3
Nitrogen Oxides	1868
Particulate <PM10>	14.7
Volatile Organic Compounds (VOC)	31.8
Carbon Monoxide	118.7

On the basis of the information submitted by the U.S. Navy, and the review criteria established by the above mentioned regulations, EPA has concluded that the project will not cause, or contribute to, a violation of any National Ambient Air Quality Standard. It is the intent of EPA to approve the project subject to the enclosed conditions.

A public notice in the local newspaper will announce the proposed project, EPA's proposed action, and the locations where EPA's technical analysis will be available. Comments on this proposed action may be submitted to the EPA San Francisco Regional Office, Attn: Bob Baker (A-5-1), for a period of thirty (30) days from the start of the public

A-5-1
Baker
11/1/95

comment period. Unless substantive new information is forthcoming, a final decision on the proposed action granting an Approval to Construct will be taken within thirty (30) days from the close of the public comment period. Should there be a significant degree of public comment with respect to the proposed action, EPA may hold a public hearing. The final permit action will be effective 30 days after its receipt by the U.S. Navy, unless:

1. Review is requested under 40 CFR 124.19.

2. No comments requested a change in the draft permit, in which case the permit shall become effective immediately upon issuance.

Enclosed is a copy of the EPA's Ambient Air Quality Impact Report for the project. A copy of this report is available for public inspection at the Guam Environmental Protection Agency.

For questions concerning the technical review of your application please call Bob Baker of our New Source Section at (415) 744-1258.

Sincerely,

Matt Haber
Chief, New Source Section
Air & Toxics Division

Enclosure

cc: Guam EPA
Eric Newman, GMP Associates, Inc.

AMBIENT AIR QUALITY IMPACT REPORT

I. APPLICANT

U.S. Navy
U. S. Navy Public Works Center
APRA Harbor Complex
Agana, Guam 96910

II. PROJECT LOCATION

The proposed U.S. Navy diesel engine generating facility will be located on the site of the existing Orote Point Power Plant which is on the western side of Guam, approximately 1.6 miles west-northwest of the proposed Tenjo Diesel Engine Plant and 3.5 miles southeast of the Piti-cabras Power Plant complex. The project site is located in Guam which is under the jurisdiction of the Guam Environmental Protection Agency (GEPA). The island is currently in attainment for carbon monoxide (CO), nitrogen oxides (NO_x) and particulate matter. Two areas with 3.5 km radii centered over the Piti and Tanguisson power plants are designated non-attainment for SO_2.

III. PROJECT DESCRIPTION

The construction of the U.S. Navy diesel engine generating facility is part of the relocation of naval activities from the Philippines to Guam. The U.S. Navy will need additional baseload and peaking power for its expanded military operation on Guam. Therefore, the U.S. Navy Public Works Center (PWC) is proposing to expand the current generating facilities at its Orote Point Power Plant which is located in the Apra Harbor complex.

A. Existing Facilities at the Orote Power Plant

The present facilities at the Orote Power Plant include ten 700 kilowatt (KW) diesel engine generators. Since these units were constructed over 40 years ago and have become unusable, they will be shut down and put permanently out of operation. Until power from the new diesel generating facilities are available, the Navy PWC will use power from four portable Mobile Utility Support Equipment (MUSE) diesel engine generators. These generators, which are located northwest of the Power Plant, can produce 8 MW of power.

The existing auxiliary equipment for the ten old diesel engine generators will be removed for construction of the new facility. The equipment which will be removed includes: ten radiators, a diesel fuel holding tank, a lube oil storage tank, used lube oil storage tanks, lube oil skimmers, lube oil pumps, and other minor pieces of equipment. An existing 200,000 gallon fuel oil storage tank which will be used to fuel the MUSE generators will remain on site.

B. New Diesel Engine Generators

Three new 6.6 MW diesel engines will be constructed at the Orote Power Plant. The three Model 16TM410 Stork-Wartsila medium-speed engines will have full-load rated engine output of 6600 KW at 85°F and 60% relative humidity. A single entry reinforced concrete building, which is located adjacent and south of the existing power plant structure will house the three engines. The building will be 120 feet long by 113 feet wide with a height of 46 feet above ground level and will contain silencers to muffle engine noise. The structure will also have a free-standing stack for each engine with a release height of approximately 115 feet.

Additional equipment associated with the new diesel engine facility will include switchgear and electrical equipment for each engine, radiators for cooling the engines, diesel fuel oil storage tanks and an auxiliary diesel fueled electric generator. The two fuel oil storage tanks will each have a capacity of 90,000 gallons. The auxiliary generator will be used no more than two hours per month to facilitate start-up of the plant in the event of a blackout.

IV. EMISSIONS FROM THE PROPOSED PROJECT

The three diesel engines serve as three separate sources of emissions which vent through three stacks located within the Orote Power Plant. Annual emission levels of pollutants from the permit application are listed in Table 1. The emission totals in the permit application were based on vendor supplied test measurements and information to correct the measurements to local conditions and 15% O_2. Emissions were given per diesel engine for various load conditions. The U.S. Navy facility expects to begin operating at full load (100% Base Load) and continue at that level until electrical generating capacity from the Guam Power Authority (GPA) is increased to reliable levels. However, there will be times during this period that the diesel engines will be operating at reduced loads. Therefore emissions during 50% Base Load conditions have also been included in the application. The emissions were calculated assuming the use of No. 2 fuel oil with 0.6% Sulfur, 10° Fuel Injection Timing Retard and proper engine operation and maintenance.

Table 1
Estimated Controlled Emissions From The Project

Pollutant	Estimated Emissions		
	lb/hour/eng 50% base load	lb/hour/eng 100% base load	tons/year
Nitrogen Oxides (NO_x as NO_2)	77.8	142.2	1868
Carbon Monoxide (CO)	5.7	9.0	118.7
Particulate Matter less than 10 Microns (PM-10)	0.6	1.1	14.7
Sulfur Dioxide (SO_2)	18.2	34.3	451.3
Volatile Organic Compounds (VOC)	1.7	2.4	31.8

NOTE: Annual emission rates are for 3 engines operating at 100% base load for 8760 hours per year.

V. APPLICABILITY OF THE PREVENTION OF SIGNIFICANT DETERIORATION (PSD) REGULATIONS

The PSD regulations (40 CFR 52.21) define a "major source" as any source type belonging to a list of 28 source categories which emits or has the "potential to emit" 100 tons per year (tpy) or more of any pollutant regulated under the Clean Air Act, or any other source type which emits or has the potential to emit such pollutants in amounts equal to or greater than 250 tpy. The potential to emit is based on the maximum emissions from the source, subject to federally enforceable permit limitations. The U.S. Navy diesel engine generating facility does not belong to any of the 28 source categories, however, it is a major source because emissions of NO_x, SO_2 and CO are greater than 250 tons per year.

Under the PSD regulations, in addition to emitting 250 tpy, the source must be located in a PSD area. A PSD area is one formally designated, pursuant to section 107 of the CAA and 40 CFR 81, by a State as "attainment" or "unclassifiable" for any criteria pollutant. The U.S. Navy has submitted an application for a PSD permit for construction of a diesel engine generating facility on the Island of Guam. The facility is located in an area designated as attainment for all criteria pollutants.

However, the Piti area, approximately three miles from the facility, is currently nonattainment for sulfur dioxide (SO_2). The area has applied to be reclassified as attainment and EPA has indicated that recent changes to major sources in the area have demonstrated attainment, however, to date, the area has not been formally redesignated.

The third criteria, which is used to determine which pollutants to include in the PSD review is the existence of a "significant emissions increase". For new major stationary sources and major modifications, a significant emissions increase is defined as a increase in emissions which would equal or exceed the significant levels [40 CFR 52.21(b)(i)] for each pollutant subject to regulation. The significant levels prescribed by the PSD regulations for the subject pollutants are:

Pollutant	Significant Emission Rate (Tons/Year)
Carbon Monoxide	100
Nitrogen Oxides	40
Sulfur Dioxide	40
PM_{10}	15
Ozone	40 of VOC

A PSD review is required for all pollutants from a major source showing significant increases in emissions in an area for which the applicable National Ambient Air Quality Standards (NAAQS) for those pollutants have not been exceeded (attainment areas). In 1993 the EPA issued an exemption of Section 325 of the CAA for the island. The exemption allows the addition of electric generating sources provided that NAAQS are maintained. The exemption states that "Electric generating units to be constructed in the Cabras-Piti area must submit applications for PSD permits as though they had been redesignated as attainment for the sulfur dioxide NAAQS (40 CFR Part 69.11)." Hence, a PSD review is required for any pollutant if the project would result in increases of these pollutants above the respective significance levels.

The emission increases associated with the proposed diesel engine facility are listed in Table 1. Table 1 shows that the net emission increases of PM_{10} and VOCs are below the significant emissions levels. Therefore, these pollutants are not subject to PSD review. However, the net emission increases for NO_x, SO_2 and CO are greater than the significance levels as defined in the PSD regulations and, therefore, the source is subject to PSD review for NO_x, SO_2, and CO as follows:

1. Application of Best Available Control Technology (BACT);

2. Analysis of ambient air quality impacts from the project;

3. Analysis of air quality and/or visibility impacts on Class I areas; and

4. Analysis of impacts on soils and vegetation.

VI. BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

The PSD regulations require that a determination of BACT be made for each pollutant subject to review. BACT is defined as "..an emission limitation (including a visible emission standard) based on the maximum degree of reduction of each pollutant subject to regulation under the Act...which the Administrator, on a case-by-case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable for such source..."

The BACT determination can also be no less stringent that the New Source Performance Standards (NSPS) promulgated for the facility type. The EPA is currently proposing a NSPS for emissions of nitrogen oxides from stationary internal combustion engines (subpart FF). These proposed standards have not currently been finalized, therefore the engines are not currently subject to these NSPS. However, NO_x emissions will be comparable to the proposed NSPS.

For the U.S. Navy diesel generating facility, a BACT determination is required for CO, SO_2 and NO_x since they are the only attainment pollutants which have a significant level of emissions. Emissions of the other pollutants (PM_{10}, and VOC) are not significant, thus are not subject to a BACT analysis. Alternative BACT technologies for NO_x, SO_2 and CO are discussed below.

A. NO_x Control Technologies

The EPA Region IX BACT Guidance Document was examined to determine the appropriate NO_x control technology for the BACT determination. Alternative technologies examined for NO_x control include: Low NO_x/Lean Burn Design, Turbocharging, Exhaust Gas Recirculation (EGR), Fuel Injection Timing Retard (FITR), Selective Catalytic Reduction (SCR), Non-Selective Catalytic reduction (NSCR) and Selective Noncatalytic Reduction (SNCR). For NO_x, the applicant determined that Low NO_x/Lean Burn, EGR, SCR, NSCR, and SNCR are technically infeasible. SCR was also found to have significant environmental, economic and energy impacts. The remaining control technologies FITR and Turbocharging were examined under different load conditions and were determined to be BACT by the applicant.

After reviewing the U.S. Navy's BACT analysis and other relevant data, EPA has determined that FITR (10°) and Turbocharging, as proposed by the applicant, represents BACT for the control of NO_x emissions.

B. SO_2 Control Technologies

Alternative technologies examined for SO_2 control include Lime and Limestone scrubbing, Sodium Scrubbing, Dual Alkali System, Dry Scrubbing, and low sulfur fuel with FITR. All SO_2 control technologies except for low sulfur fuel with FITR were deemed technically infeasible primarily due to problems imposed by the remote location of Guam. For this BACT analysis, FITR with low sulfur fuel was found to be BACT for SO_2 control.

After reviewing the U.S. Navy's BACT analysis and other relevant data, EPA has determined that FITR with low sulfur fuel, as proposed by the applicant, represents BACT for the control of SO_2 emissions.

C. CO Control Technologies

In the CO determination, in addition to proper engine operation and maintenance, two alternative technologies (Non-selective Catalytic Reduction (NSCR) and a Radian Duct Burner) were examined and found to be technically infeasible. For this BACT analysis, proper engine operation and maintenance was found to be BACT for CO control.

After reviewing the U.S. Navy's BACT analysis and other relevant data, EPA has determined that proper engine operation and maintenance, as proposed by the applicant, represents BACT for the control of CO emissions.

V. AIR QUALITY IMPACTS

The PSD regulations require an air quality analysis to determine the impacts of the proposed project on ambient air quality. For all regulated pollutants emitted in significant quantities, the analysis must consider whether the proposed facility will cause a violation of (1) the applicable PSD increments, and (2) the National Ambient Air Quality Standards (NAAQS). A discussion on the general approach, air quality model selection, significant impact levels, PSD increment consumption, and compliance with ambient air quality standards are presented below.

A. Existing Air Quality

In order to evaluate whether the emissions from the U.S. Navy diesel engine generating facility will cause violations of the NAAQS, it is necessary to have available measurements of existing ambient air quality levels in the vicinity of the project site. These levels are needed for each criteria pollutant that will be emitted above the significant emission level.

Air quality data are recorded at four different locations on Guam: Agana, Piti (two sites), Dededo, and Mangilao. The Piti and Agana stations are closest to the proposed site. Data from these two stations were used to estimate background pollutant concentrations for the ambient air quality modeling. It is expected that these concentrations include some contribution from the major stationary sources. The use of this data in the modeling is considered conservative as some "double counting" of emissions impacts may be occurring.

B. Preliminary Air Quality Model Selection and Modeling Approach

Since the U.S. Navy diesel engine generating facility is located in an attainment area for CO, SO_2 and NO_x and emits significant emission levels for all of these pollutants, a preliminary source impact analysis was completed to determine the potential for violations of the National Ambient Air Quality Standards (NAAQS). For completeness, the applicant has also included a preliminary analysis of PM_{10} impacts. Air quality impacts were determined using the integrated model program called BEEST-X, which is a combination of EPA air quality models ISCST2 and COMPLEX1. The BEEST-X model has recently been approved by EPA as equivalent to ISCST-2, COMPLEX1 and the EPA intermediate terrain procedures. This model was used in both screening test and a more refined mode to determine the project's impact area and to compare predicted concentrations against significance levels.

A refined preliminary analysis was also completed for the U.S. Navy facility using one year (March 1, 1993 through February 28, 1994) of meteorological data collected by the GPA at the Cabras meteorological station. This station is located approximately 260 meters southeast of the Cabras Power Plant which is 3.5 miles northwest of the U.S. Navy facility. Upper air input data used in the air quality modeling was recorded at the National Weather Service station on Guam over the same period. As in the screening analysis, a polar grid with 45 rings extending out every 10 degrees for 36 directions was used to predict the maximum ambient concentrations. This polar grid was also centered on the U.S. Navy's diesel engine generating facility. A computer program, GEP, was used to determine the building parameters for input into the BEEST-X model.

C. Preliminary Air Quality Analysis

The maximum predicted ambient concentrations are shown in Table 2 for the preliminary impact analysis. The maximum predicted screening concentrations and the maximum predicted refined concentrations for SO_2 and NO_x are above the class II significant impact levels for 3 hour, 24 hour, and annual averaging periods. Therefore, a full impact analysis is required for SO_2 and NO_x. The

maximum annual NO_x and SO_2 impacts were located west of the facility while the maximum SO_2 short term impacts occurred east-southeast (3-hour) and west-southwest (24-hour) of the facility. The predicted CO concentrations are below the class II significant impact levels for carbon monoxide; therefore, a full impact analysis is not required for CO.

Table 2
Refined Screening Analysis Results

Pollutant	Total Concentration (ug/m3)	Significant Concentration (ug/m3)	Monitoring Threshold (ug/m3)	Averaging Period
CO	29.9	2000		1-hour
	9.5	500	575	8-hour
SO_2	96.1	25		3-hour
	26.4	5	13	24-hour
	9.4	1		Annual
NO_x	21.5	1	14	Annual
PM-10	1.1	5		24-hour
	0.2	1		Annual

C. Full Air Quality Impact Analysis

A full impact analysis of SO_2 and NO_x impacts was completed since the significant impact levels for these pollutants were exceeded in the preliminary analysis. A full impact analysis expands the preliminary analysis in that it considers emissions from other existing and proposed sources. This analysis can then be used to predict ambient concentrations against which the applicable NAAQS and PSD increments are compared for all applicable criteria pollutants. For SO_2 and NO_x, the selection of background sources (sources other than that being permitted) is somewhat different for the NAAQS and PSD increment analysis. For the NAAQS analysis, all existing and proposed sources which could impact the NAAQS are considered in the analysis. The full impact analysis being conducted to predict impacts on the NAAQS from the U.S. Navy facility included the following emission sources:

U.S. Navy Diesel Engines (3)
Tenjo Diesel Engines (4)
Cabras Power Plant Diesel Engines (2)
Cabras Boiler Units (2)
Piti Power Plant Boiler Units (3)
Manenggon Power Plant Diesel Engines (2)

In comparison, the PSD increment analysis is limited to increment consuming sources:

U.S. Navy Diesel Engines (3)
Tenjo Diesel Engines (4)
Cabras Power Plant Diesel Engine (2)
Manenggon Diesels (2)

The source and emissions parameters used for the Tenjo and Cabras diesel engines are identical to those used in the Tenjo and Cabras PSD permit applications. The SO_2 emissions used in the analyses for the Cabras diesel engine and boilers, and the Piti boilers incorporate an intermittent pollution control strategy based on meteorological conditions. During on-shore wind conditions, the emission sources burn a low sulfur fuel oil. During offshore conditions, a high sulfur content fuel oil is burned.

Table 3 shows the predicted modeling results for the PSD analysis. The highest second-highest (HSH) SO_2 short term on-shore impacts occur southeast of the Piti power plant. The HSH short term SO_2 off-shore impacts occur southwest of the Piti Power Plant. The Ozone Limiting Method (OLM) was used to predict NO_2 based on the assumption that if the ambient ozone concentration is greater than the maximum predicted ambient NO_x concentration, total conversion of NO_x to NO_2 occurs. If the ozone concentration is less than the NO_x concentration, then the conversion to NO_2 is ozone limited. The maximum modeled impact was 55.9 ug/m3, assuming 100% conversion of NO_x to NO2. With the assumption that ozone levels on Guam are 10 ug/m3, the predicted NO2 concentration drops to 15.6 ug/m3. Violations of the SO_2 PSD Class II standards were modeled onshore for the 3-hour standard, and offshore for the 24-hour and Annual averaging periods.

Table 3
PSD Class II Increment Analysis Results

Pollutant	Averaging Period	Predicted Concentration Offshore/On shore (ug/m3)	Class II Increment ($\mu g/m^3$)
SO_2	3-hour	302.4/548.4	512
	24-hour	110.2/72.4	91
	Annual	25.8/11.3	20
NO_x (as NO_2)	Annual	15.6	25
PM-10	24-hour	10.7	30
	Annual	3.0	17

The NAAQS modeling results impacts are shown in Table 4. The NAAQS analysis was completed for all pollutants being emitted from the U.S. Navy facility. Ambient levels of PM were included in the NAAQS analysis for PM. The maximum recorded background level recorded for 1990 and 1991, the two years for which data are available, was 45 $\mu g/m^3$ and 76 $\mu g/m^3$. Ambient background levels were not considered in the SO_2 or NO_x analysis since data for these pollutants was not available to the applicant. When available this data should be incorporate into the modeling analysis. The modeling analysis predicted that high second-highest SO_2 impacts occurred during on-shore conditions and were located southeast of the Piti facility. The maximum annual average SO_2 impacts occurred during off-shore conditions and were located west of the Piti facility. The maximum annual NO_x impact was located west-southwest of the U.S. Navy facility.

Table 4
NAAQS Analysis Results

Pollutant	Averaging Period	Predicted Concentration ($\mu g/m^3$)	NAAQS Standard ($\mu g/m^3$)
SO_2	3 hour	1263.4/1357.2	1300
	24 hour	413.2/269.6	365
	Annual	107.4/11.8	80
NO_x	Annual	56.1	100
CO	1 hour	457.0	40,000
	8 hour	157.5	10,000
PM	24 hour	54.4	150
	Annual	6.6	50

Table 5
Source Contributions to PSD Class II SO_2 Exceedances

Averaging Period	Maximum Concentration ($\mu g/m^3$)	PSD Class II Increment ($\mu g/m^3$)	Source Contribution (%)			
			U.S. Navy (Orote) Diesels	Cabras Diesels	Tenjo Diesels	Manenngon Diesels
3-Hr	548	512	0	0	100	0
24-Hr	110	91	0	100	0	0
Annual	26	20	3.0	94.4	0.4	2.2

Overall, the modeling results show exceedances of the 3-hr, 24-hr and annual average SO_2 PSD Class II increments and NAAQS. However, in all cases, modeling indicates that exceedances occur without significant contributions from the U.S. Navy diesel facility (see Table 5). Consequently, the results demonstrate that the operation of the Orote diesels will not cause or contribute to any exceedances of the increments or the NAAQS.

In addition, as a result of the above modeling, the permit applications for those facilities with the largest air quality impacts are being revised to include lower sulfur fuels and more advanced air modeling. As a result of the changes, the new air quality analyses show that no exceedances of PSD increments or the NAAQS will occur.

VIII. ADDITIONAL IMPACT ANALYSIS

In addition to assessing the ambient air quality impacts expected from a proposed new source or modification, the PSD regulations require that certain other impacts be considered. These additional impacts are those on visibility, soils and vegetation, and growth.

A. Visibility

The PSD regulations require that PSD permit applications address the potential impairment to visibility in Class I areas. Since there are no Class I areas located on Guam, no significant visibility impacts are expected in any Class I areas.

B. Soils and Vegetation

Soils in Guam are of two distinct types dependent upon the geographical area of Guam under examination. Soils of the northern portion of the island are formed from weathered limestone carbonate material while soils in the southern half of the island are formed from weathered volcanic material. While deposition of SO_2 could affect the pH of soils, deposition of NO_x could enhance vegetative growth since nitrates are plant nutrients. To best address the impacts on soil and vegetation, the PSD application has examined the impacts on soils located in the area of highest predicted long-term impacts, near the tip of the Orote Peninsula. Soils in this area are generally well-drained with underlying limestone. Therefore the soils are neutral to moderately alkaline. Since the Orote Power Plant is not predicted to have a significant impact on ambient concentrations, and the soils have a buffering capacity, no significant impacts are expected on soils.

The vegetation located in the area of predicted maximum impacts does not contain any threatened or endangered species. Since the predicted concentrations around the facility are below the NAAQS secondary levels, no significant detrimental effects are expected on vegetation.

C. Growth Impacts

The Navy's Orote Power Plant is being build in response to the Navy's need for additional baseload power due to the relocation of Naval operations in Guam. Since the project is in response to current growth in the area, the project is not expected to promote additional growth on Guam. Therefore secondary air quality impacts are not expected.

IX. ENDANGERED SPECIES ACT

Pursuant to Section 7 of the Endangered Species Act, EPA is required to initiate consultation with the Fish and Wildlife Service (FWS) if any action, including permit issuance, might jeopardize the continued existence of endangered or threatened species or adversely modify their critical habitat. However, no terrestrial bird, mammal, or reptile species, that is federally listed, is found in the impact are of the project.

X. CONCLUSIONS AND PROPOSED ACTION

Based on the information supplied by the applicant, the U.S. Navy, and our review of the analyses contained in the permit application, it is the preliminary determination of the EPA that the proposed project will employ Best Available Control Technology and will not significantly contribute to a violation of the NAAQS or an exceedance of a PSD increment. Therefore, EPA intends to issue the U.S. Navy an Authority to Construct, subject to the following permit conditions.

PERMIT CONDITIONS

I. Permit Expiration

This approval to Construct/Modify shall become invalid (1) if construction is not commenced (as defined in 40 CFR 52.21(b)(8)) within 18 months after the approval takes effect, (2) if construction is discontinued for a period of 18 months or more, or (3) if construction is not completed within a reasonable time.

II. Notification of Commencement of Construction and Startup

The Regional Administrator shall be notified in writing of the anticipated date of initial startup (as defined in 40 CFR 60.2(o)) of each facility of the source not more than sixty (60) days nor less than thirty (30) days prior to such date and shall be notified in writing of the actual data of commencement of construction and startup within fifteen (15) days after such date.

III. Facilities Operation

All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this Approval to Construct/Modify shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions.

IV. Malfunction

The Regional Administrator shall be notified by telephone within 48 hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner which results in an increase in emissions above any allowable emissions limit stated in Section X of these conditions. In addition, the Regional Administrator shall be notified in writing within fifteen (15) days of any such failure. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of the initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under Section X of these conditions, and the methods utilized to restore normal operations. Compliance with this malfunction notification provisions shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause.

V. Right to Entry

The Regional Administrator, the head of the State Air Pollution Control Agency, the head of the responsible local Air Pollution Control Agency, and/or their authorized representative, upon the presentation of credentials, shall be permitted:

A. to enter upon the premises where the source is located or in which any records are required to be kept under the terms and conditions of this Approval to Construct/Modify; and

B. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of the Approval to Construct/Modify: and

C. to inspect any equipment, operation, or method required in this Approval to Construct/Modify; and

D. to sample emissions from the source.

VI. Transfer of Ownership

In the event of any changes in control or ownership of facilities to be constructed or modified, this Approval to Construct/Modify shall be binding on all subsequent owners and operators. The applicant shall notify the succeeding owner and operator of the existence of this Approval to Construct/Modify and its conditions by letter, a copy of which shall be forwarded to the Regional Administrator and the State and local Air Pollution Control Agency.

VII. Severability

The provisions of this Approval to Construct/Modify are severable, and, if any provision of this Approval to Construct/Modify is held invalid, the remainder of this Approval to Construct/Modify shall not be affected thereby.

VIII. Other Applicable Regulations

The owner and operator of the proposed project shall construct and operate the proposed stationary source in compliance with all other applicable provisions of 40 CFR Parts 52, 60 and 61 and all other applicable federal, state and local air quality regulations.

IX. Paperwork Reduction Act

Any requirements established by this permit for the gathering and reporting of information are not subject to review by the Office of Management and Budget ("OMB") under the Paperwork Reduction Act because this permit is not an "information collection request" within the meaning of 44 U.S.C. §§ 3502(4) & (11), 3507, 3512, and 3518. Furthermore, this permit and any information gathering and reporting requirements established by this permit are exempt from OMB review under the Paperwork Reduction Act because it is directed to fewer than ten persons. 44 U.S.C. § 3502(4), (11); 5 C.F.R. § 1320.5(a).

X. Special Conditions

A. Certification

The U.S. Navy shall notify the EPA in writing of compliance with Special Conditions IX.B and IX.H and shall make such notification within (15) days of such compliance. This letter must be signed by a responsible representative of the U.S. Navy.

B. Air Pollution Control Equipment

The U.S. Navy shall install, continuously operate and maintain the following air pollution controls to minimize emissions. Controls listed shall be fully operational upon startup of the proposed equipment.

1. Fuel Injection Timing Retard of 10 degrees

2. Turbocharging

C. Performance Tests

1. Within 60 days of achieving the maximum production rate of the proposed equipment but not later than 180 days after initial startup of the equipment as defined in 40 CFR 60.2(o), and at such other times as specified by the EPA, the U.S. Navy shall conduct performance tests for NO_x, SO_2, and CO and furnish the EPA (Attn: A-3-3) a written report of the results of such test. The tests for NO_x, SO_2, and CO shall be conducted on an annual basis and at the maximum operating capacity of the facilities being tested. Upon written request (Attn: A-3-3) from U.S. Navy, EPA may approve the conducting of performance test as a lower specified production rate. After initial performance tests and upon written request and adequate justification from the U.S. Navy, EPA may waive a specified annual test for the facility.

2. Performance tests for the emissions of SO_2, NO_x, and CO shall be conducted and the results reported in accordance with the test methods set forth in 40 CFR 60, Part 60.8 and Appendix A. The following test methods shall be used:

   a. Performance tests for the emissions of SO_2 shall be conducted using EPA Methods 1-4 and 6C.

b. Performance tests for the emissions of CO shall be conducted using EPA Methods 1-4 and 10.

c. Performance tests for the emissions of NO_x shall be conducted using EPA Methods 1-4 and 7E.

The EPA (Attn: A-3-3) shall be notified in writing at least 30 days prior to such test to allow time for the development of an approvable performance test plan and to arrange for an observer to be present a the test.

Such prior approval shall minimize the possibility of EPA rejection of test results for procedural deficiencies. In lieu of the above-mentioned test methods, equivalent methods may be used with prior written approval from the EPA.

3. For performance test purposes, sampling ports, platforms and access shall be provided by the U.S. Navy on the diesel engine exhaust systems in accordance with 40 CFR 60.8(e).

D. Operating Limitations

1. The sulfur content in the fuel oil used to fire the diesel engine shall not exceed 0.6 weight percent.

2. The U.S. Navy shall record and maintain records of the amounts of fuel oil fired and sulfur weight percent each calendar quarter, and the plant hours of operation. All information shall be recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, calculation and record.

E. Emissions Limits for SO_2

On and after the date of startup, the U.S. Navy shall not discharge or cause the discharge of SO_2 in excess of 34.3 lbs/hr from each diesel engine.

F. Emission Limits for CO

On and after the date of startup, the U.S. Navy shall not discharge or cause the discharge of CO in excess of 9.0 lbs/hr from each diesel engine.

EPA may set a new lower allowable emission rate for the above emission limits after reviewing the performance test results required under Special Condition C.

If the CO emission limit is revised, the difference between the CO emission limit set forth above and a revised lower CO emission limit shall not be allowed as an emission offset for future construction or modification.

G. Emission Limits for NO_x

On and after the date of startup, the U.S. Navy shall not discharge or cause the discharge of NO_x in excess of 142.2 lbs/hr from each diesel engine.

EPA may set a new lower allowable emission rate for the above emission limits after reviewing the performance test results or the initial NO_x monitoring data required under Special Conditions C and H.

If the NO_x emission limit is revised, the difference between the NO_x emission limit set forth above and a revised lower NO_x emission limit shall not be allowed as an emission offset for future construction or modification.

H. Continuous/Predictive Emission Monitoring

1. Prior to the date of startup and thereafter, the U.S. Navy shall install, maintain and operate the following continuous monitoring systems (CEM) in the main stack:

   a. A continuous monitoring system to measure stack gas NO_x concentrations. The system shall meet EPA monitoring performance specification (40 CFR 60.13 and 40 CFR 50, Appendix B, Performance Specification 2, 3, and 4).

   b. A continuous monitoring system to measure stack gas volumetric flow rates. The system shall meet EPA performance specifications (40 CFR Part 52, Appendix E).

2. Alternatively, instead of a CEM system, the U.S. Navy may install a Predictive Emission Monitoring system (PEM) for determining stack gas volumetric flow rates and NOx concentrations. The system shall monitor engine operating conditions and predict NOx emission rates as specified in a plan submitted to EPA for approval within 360 days of the initial startup of the facility. The plan shall identify the operating conditions to be monitored and meet all of the requirements of 40 CFR 75, Subpart E, including an application for certification of an alternative monitoring system.

3. The U.S. Navy shall maintain a file of all measurements, including continuous monitoring systems evaluations; all continuous monitoring systems or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; performance and all other information required by 40 CFR 60 recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports and records.

4. The U.S. Navy shall notify EPA (Attn: A-3-3) of the date which demonstration for the continuous monitoring system (if applicable) performance commences (40 CFR 60.13(c)). This date shall be no later than 60 days after startup.

5. The U.S. Navy shall submit a written report of all excess emissions to EPA (Attn: A-3-3) for every calendar quarter. The report shall include the following:

   a. The magnitude of the excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factors used, and the date and time of commencement and compilation of each time period of excess emissions.

   b. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the engine exhaust systems. The nature and cause of any malfunction (if known) and the corrective action taken or preventative measures adopted shall also be reported.

   c. The date and time identifying each period during which the continuous monitoring system or PEM was inoperative except for zero and span checks, and the nature of the system repairs or adjustments.

   d. When no excess emissions have occurred or the continuous monitoring system or PEM has not been imperative, repaired, or adjusted, such information shall be stated in the report.

   e. Excess emissions shall be defined as any 3-hour period during which the average emission of SO_2, NO_x, and PM, as measured by the CEM, or predicted by the PEM, exceeds the maximum emission limits set forth in Conditions IX.E, IX.F., and IX.G.

6. Excess emission indicted by the CEM or PEM system shall be considered violations of the applicable emission limit for the purpose of this permit.

7. If a CEM system is installed, then not less than 90 days prior to the date of startup of the facility, the U.S. Navy shall submit to the EPA (Attn: A-3-3) a quality assurance project plan for the certification and operation of the continuous emission monitors. Such a plan shall conform to the EPA document "Guidelines for Developing a Quality Assurance Project Plan" (QAMS 005/80). Continuous emission monitoring may not begin until the QA project plan has been approved by the EPA Region 9.

X. Agency Notifications

All correspondence as required by this Approval to Construct/Modify shall be forwarded to:

A. Director, Air and Toxics Division (Attn: A-3-3)
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

B. Administrator
Guam Environmental Protection Agency
P.O. Box 22439 GMF
Barrigada, Guam 96921